

Amendments to the Claims:

This listing of claims will replace all prior versions and listings of claims in the application.

Claims Listing

Claims 1-72 (Canceled)

Claim 73. (Currently Amended) An apparatus for conducting electrophoresis therein, the apparatus comprising:

a body of separating gel;
a cathode electrically coupled to a first end of said body of separating gel; and
an anode comprising an electrochemically ionizable metal, wherein said anode is disposed in a semi-solid ion reservoir containing a buffer, wherein said semi-solid ion buffer reservoir is disposed at a second end of said body of separating gel and is electrically coupled to said body of separating gel, wherein said buffer comprises ~~an amine and a~~ Zwitter ion and an amine selected from (Bis(2-hydroxyethyl)-imino-tris(hydroxymethyl)-methane) (Bis-Tris) or amino methyl propanol; wherein said buffer has a conductivity in the range of 30×10^{-5} (ohm⁻¹/cm) to 140×10^{-5} (ohm⁻¹/cm), and wherein said buffer inhibits the migration of ions of said electrochemically ionizable metal into said body of separating gel, during said electrophoresis.

Claim 74. (Previously presented) The apparatus according to claim 73, wherein said cathode, said anode, said body of separating gel and said semi-solid ion buffer reservoir are disposed within a substantially closed cassette.

Claim 75. (Previously presented) The apparatus according to claim 73, wherein said electrochemically ionizable metal of said anode comprises copper.

Claim 76. (Currently amended) The apparatus according to claim 73, wherein said cathode comprises a metal selected from the group consisting of copper and aluminum.

Claim 77. (Cancelled).

Claim 78. (Previously presented) The apparatus according to claim 73, wherein the pK of said amine is lower than that of said Zwitter ion by about between 0.9 and 2 pH units.

Claim 79. (Currently amended) The apparatus according to claim 73, wherein said buffer is selected from the group consisting of,

a combination of bis[2-hydroxyethyl]iminotris[hydroxymethyl]methane and N-tris[hydroxymethyl]methylglycine,

a combination of bis[2-hydroxyethyl]iminotris[hydroxymethyl]methane and N,N-bis[2-hydroxyethyl]glycine,

a combination of bis[2-hydroxyethyl]iminotris[hydroxymethyl]methane and Glycylglycine,

~~a combination of Tris and Glycine,~~ and

a combination of amino methyl propanol and proline.

Claim 80. (Previously presented) The apparatus according to claim 73, wherein said body of separating gel comprises polyacrylamide or agarose.

Claim 81. (Previously presented) The apparatus according to claim 73, wherein the ions of said electrochemically ionizable metal do not migrate into said body of separating gel during electrophoresis.

Claim 82. (Previously presented) The apparatus according to claim 73, wherein said body of separating gel comprises at least one sample well.

Claims 83-92 (Cancelled)

Claim 93. (Previously presented) The apparatus of claim 73, wherein said Zwitter ion comprises a carboxyl group.

Claim 94. (Previously presented) The apparatus of claim 73, wherein the buffer has a concentration in the range of 50 mM to 300 mM.

Claim 95. (Currently amended) The apparatus of claim 73, wherein said body of separating gel further comprises a gel buffer comprising an amine and a Zwitter ion, wherein said gel buffer has a conductivity in the range of 30×10^{-5} (ohm⁻¹/cm) to 140×10^{-5} (ohm⁻¹/cm).

Claim 96. (Cancelled)